

Dr. SEBASTIAN KRIEGER

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- About • I combine creative problem-solving with scientific rigor to tackle complex challenges in data science, machine learning, and oceanography. With over 20 years of experience, I have developed successful data-driven solutions across various industries, leveraging my expertise in machine learning, AI, and numerical modeling. I am also passionate about leading data-driven projects and mentoring teams, fostering technical excellence and professional growth.
- Research background • Ph.D. in Physical Oceanography, focusing on global ocean dynamics using satellite altimetry.
- Postdoctoral research in near-shore ocean observation, ocean color satellite remote sensing, and coupled hydrodynamic and bio-physical numerical modeling.
- Core expertise • *End-to-end data management*: Design and implement data workflows, including ETL pipeline development, data curation, and integration.
- *Machine learning & AI*: Build and deploy production-ready machine learning models for data generation, predictive analytics, and quality control.
- *Technical leadership*: Lead data-driven projects and mentor junior colleagues, fostering their professional growth.
- *Communication*: Distill complex technical findings into clear, actionable insights for diverse stakeholders.
- *Collaboration*: Enjoy and have experience working with multidisciplinary and cross-cultural teams, both remotely and in-person.
- *Software development*: Adopt and promote best practices in test-driven development (TDD), clean code principles, data governance, and agile methodologies to ensure robust, maintainable, and scalable solutions.
- *Open to relocation*: As a dual Brazilian and an EU citizen, I am available for relocation opportunities within Europe and beyond.
- Language skills • Fluent in English and Portuguese.
- Conversational fluency in French, German, and Spanish.
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SELECTED WORK & RESEARCH EXPERIENCE

2018–present **Bloomberg**

São Paulo, SP

Senior data scientist / data engineer

Led the design, implementation, and maintenance of 30+ data workflows and ETL pipelines for global financial data products, processing millions of records daily and ensuring seamless delivery to clients • Developed and deployed custom machine learning models to forecast economic trends, predict financial conditions, and detect anomalies • Conducted research to expand data product offerings and enhance analytical features, contributing to the continuous evolution of financial data solutions • Collaborated on public outreach programs, educating clients and students on data science and analytics, while reinforcing Bloomberg's brand presence • Mentored colleagues in best practices for computer programming and data analysis, conducting one-on-one or group training sessions • Supported journalists and business stakeholders with data-driven research and analysis to drive strategic insights.

2016–present **nublia**

São Paulo, SP

Solo data science and technical consultant, online lecturer (part-time, concurrent with other roles)

Designed and implemented ETL pipelines to integrate and process large datasets, ensuring efficient and accurate data flow • Applied machine learning and data science techniques to drive business growth and innovation, including customer segmentation models and click-through rate forecasting • Developed data science and analytics training programs, training cohorts of 20+ technical professionals seeking to enhance their skills.

2002–2021 **Formula 1 São Paulo Grand Prix**

São Paulo, SP

Race secretary / Event operations coordinator (part-time, contractor, concurrent with other roles)

Coordinated logistics and information flow between FIA officials, local organizers, and stakeholders to ensure seamless event execution • Provided support to senior officials, including the Clerk of the Course, facilitating smooth operations and decision-making • Managed event setup and operations for high-profile events, overseeing driver meetings, parades, and ceremonies • Created and disseminated critical event information, such as sporting regulations and schedules, to stakeholders. • Leveraged language skills to translate key documents and facilitate communication between international teams • Demonstrated adaptability and problem-solving skills in responding to last-minute, high-pressure situations.

Deputy race-secretary (part-time, contractor, concurrent with other roles)

2016 **Rio 2016 Organising Committee for the Olympic and Paralympic Games**

Rio de Janeiro, RJ

Sport Information Coordinator – Canoe sprint/para-canoe

Led a team of 10 volunteers, ensuring smooth operations in a fast-paced, high-pressure environment • Coordinated the publication and distribution of sporting information, including results and official communications, ensuring accuracy and timeliness • Provided customer service to athletes, team members, and officials, responding promptly to queries and requests in a multi-language environment • Demonstrated a keen eye for detail in reviewing and distributing technical documents, as well as managing the setup of competition installations

2014–2016 **Centro de Biologia Marinha, Universidade de São Paulo**

São Sebastião, SP

Postdoctoral research fellow

Collected and analyzed data through *in situ* field measurements for various research projects, including the SIMCosta mooring network project, enhancing the understanding of coastal dynamics • Managed and analyzed biogeochemical datasets using data mining and time-series analysis techniques for the Biota/FAPESP Araçá project, providing insights into ecosystem health and function in the Araçá Bay • Designed and implemented a MySQL database for the storage, management, and retrieval of georeferenced data, supporting research initiatives • Developed coupled numerical models integrating hydrodynamics and phytoplankton growth processes to simulate and analyze ecosystem dynamics in marine environments • Taught and mentored graduate and undergraduate students through lectures on data analysis and numerical modeling • CAPES fellow.

2009–2014 **Instituto Oceanográfico, Universidade de São Paulo**

São Paulo, SP

Sc.D./Ph.D. graduate student

Analyzed satellite remote sensing altimetry images, focusing on global sea level anomalies (SLA) and mesoscale eddies, applying advanced statistical and signal processing techniques • Developed a signal de-noising filter using discrete wavelet transforms (DWT) to detect and extract propagating features in satellite altimetry data • Implemented a geometric feature detection algorithm to identify signatures of mesoscale eddies, aiding in the differentiation between seasonal variability, westward-propagating planetary waves, and mesoscale eddies

- Delivered short courses on Python programming, fostering outreach and sharing technical knowledge with graduate and undergraduate students
- Co-organized a scientific symposium, promoting collaboration and integration among oceanography researchers
- Actively contributed as a student representative, ensuring effective communication between faculty and students
- Served as an undergraduate teaching assistant and co-adviser for student theses, mentoring students and colleagues
- CAPES and CNPq fellow.

2008–2009 **Bermuda Institute of Ocean Sciences**

Saint George, Bermuda

Trainee/research scholar

Conducted independent research on the influence of large-scale ocean waves on chlorophyll concentration, analyzing satellite imagery to identify patterns • Delivered a series of short talks to share research findings, honing skills in knowledge dissemination and academic exchange • Participated in scientific cruises aboard the R/V Atlantic Explorer and R/V Oceanus for the Oceanic Flux Program (OFP) and Bermuda Atlantic Time-series Study (BATS), contributing to oceanographic field research and data collection • **Nippon Foundation– Partnership for Observation of the Global Ocean** (NF–POGO) fellow.

EDUCATION	2009–2014	Sc.D. Physical Oceanography <i>Instituto Oceanográfico, Universidade de São Paulo</i> Thesis title: Mesoscale eddies, Rossby waves and the spectra from altimetry data.
	2008–2009	Pg.C. Ocean Observatories <i>Bermuda Institute of Ocean Sciences</i> Thesis title: Nutrient pumping induced by first mode baroclinic Rossby waves in the Sargasso Sea.
	2006–2008	M.Sc. Physical Oceanography <i>Instituto Oceanográfico, Universidade de São Paulo</i> Thesis title: Spectral variability distribution of baroclinic Rossby waves in the Atlantic Ocean and particularly in the region of the Abrolhos archipelago.
	2000–2004	B.Sc. Physics <i>Instituto de Física, Universidade de São Paulo</i>
SELECTED COMPLIMENTARY EDUCATION	Jun 2023	Scrum Foundations <i>Scrum Alliance</i> . Credential ID 001540195
	Nov 2021	AI Product Manager <i>Udacity</i> . Credential
	Apr 2021	Venture Deals <i>Kauffman Fellows & TechStars</i> . Credential ID 10581-489738
TECHNICAL SKILLS	Open source	pycwt : Free and open source Python module for spectral analysis and statistical significance tests using the continuous wavelet transform (CWT).
	Data analysis	Data mining, dynamical systems, K-nearest neighbours, multi-variate linear and logistic regressions, artificial neural networks, principal component analysis, data visualization, wavelet and Fourier spectral analysis.
	Computer programming	Python, MATLAB/Octave, SQL, Visual Basic.
	Databases	Design and management of PostgreSQL, MySQL/MariaDB, SQLite databases.
OTHER INTERESTS	Volunteering	Online mentor to early-career scientists and post graduate students in marine and aquatic sciences through the Trevor Platt Science Foundation since 2022. • English tutor to young people and adults from public schools in Brazil as part of Cidadão Pró-Mundo since 2019.
	Rowing	National and continental rowing umpire accredited by <i>Confederação Brasileira de Remo</i> (CBR) and <i>Confederación Sudamericana de Remo</i> (CSAR).
	Hobbies	Woodwork, sourdough bakery, cycling, music (guitar, bansuri flute).